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VERIFICATION OF A TRANSLATION

I, Susan ANTHONY BA, ACIS,

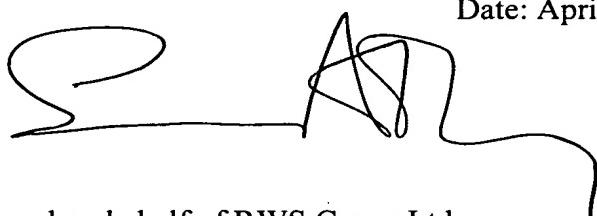
Director of RWS Group Ltd, of Europa House, Marsham Way, Gerrards Cross, Buckinghamshire, England declare:

That the translator responsible for the attached translation is knowledgeable in the German language in which the below identified international application was filed, and that, to the best of RWS Group Ltd knowledge and belief, the English translation of the amended sheets of the international application No. PCT/EP2004/052739 is a true and complete translation of the amended sheets of the above identified international application as filed.

I hereby declare that all the statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the patent application issued thereon.

Date: April 11, 2006

Signature :



For and on behalf of RWS Group Ltd

Post Office Address :

Europa House, Marsham Way,

Gerrards Cross, Buckinghamshire,

England.

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Patent Claims

1. A locating arrangement (198), having a plurality of ultrasonic transmitters (1a to 4c) strung along a path (104), the distance (A3) between adjacent ultrasonic transmitters (1a, 1b) being greater than one meter, characterized by at least three radiation receivers (130 to 136) for one electromagnetic radiation which are strung along the path (104).

2. The locating arrangement (198) as claimed in claim 1, characterized in that the transmitters (1a to 4c) are strung at mutually uniform distances (A3, A4) between mutually adjacent transmitters (1a, 1b), the distance (A3, A4) being in the range of from one meter to three meters, preferably in the range of from 1.5 meters to two meters, in particular 1.6 meters, and/or wherein the transmitters (1a to 4c) are strung along a straight section (104).

3. The locating arrangement (198) as claimed in claim 1 or 2, characterized in that the transmitters (1a to 4c) are arranged along an aisle (104), in particular along an aisle (104) in a factory building (100), preferably semiconductor wafers or other substrates for integrated electronic circuits being processed in the factory building.

4. The locating arrangement (198) as claimed in one of the preceding claims, characterized by a drive unit (220), which drives the transmitters (1a to 4c) in accordance with a pulsed operating mode in which ultrasonic pulses are transmitted between transmission pauses.

5. The locating arrangement (198) as claimed in one of the preceding claims, characterized by a drive unit (220) which works cyclically and generates for the transmitters (1a to 4c) drive signals which instigate the transmission of ultrasonic pulses, a cycle containing at least two sections in each of which a different portion of the transmitters (1a to 4c) is driven, and the drive unit (220) preferably containing a plurality of group drive units (230 to 238) which in each case generate the drive signals for a plurality of transmitters (1a to 4c) depending on an input signal.

6. The locating arrangement (198) as claimed in claim 5, characterized by at least three further US transmitters (1a to 7c) strung along a further path (108) preferably along a further straight section and preferably at mutually identical distances (A3, A4) between mutually adjacent transmitters (1a, 1b), the two paths (104, 108) lying parallel or transversely (102, 104) with respect to one another.

7. The locating arrangement (198) as claimed in claim 6, characterized in that the two paths (104, 108) are arranged parallel to one another, and wherein one path (108), in the event of a parallel displacement, overlaps the other path (104) completely or over at least 50 percent of the length.

8. The locating arrangement (198) as claimed in claim 7, characterized in that at least two transmitters (1a, 4b) on different paths (104, 108) transmit simultaneously, it preferably being the case that more than one transmitter or more than three transmitters or more than six transmitters lie between the two transmitters (1a, 4b) after a parallel displacement.

9. The locating arrangement (198) as claimed in claim 7 or 8, characterized in that a region (106) into which no ultrasonic signal of the transmitters (1a to 4c) or only a greatly attenuated ultrasonic signal penetrates lies between the two paths (104, 108).

10. The locating arrangement (198) as claimed in one of claims 5 to 9, characterized by at least three further US transmitters (1a to 5a) strung along a preferably straight main path (102) at preferably mutually identical distances (A3, A4) between mutually adjacent transmitters (1a, 1b), the main path (102) lying transversely with respect to at least two secondary paths (104, 108), in particular at an angle of 90 degrees.

11. The locating arrangement (198) as claimed in one of the preceding claims, characterized in that the at least three radiation receivers (130 to 136) are strung along a straight path (104), preferably at mutually identical distances between mutually adjacent radiation receivers (130, 132),

the distance between adjacent receivers (130, 132) preferably being at least twice as large as the distance between adjacent transmitters (1a, 1b), and the distance between adjacent receivers (130, 132) preferably being less than five times the distance between the transmitters (1a, 1b).

12. The locating arrangement (198) as claimed in claim 11, characterized in that at least one of the following features is provided:

the distance between mutually adjacent receivers (130, 132) is greater than three meters and less than seven meters,

the distance between mutually adjacent receivers (130,

132) is greater than four meters and less than 5.5 meters,
the distance between mutually adjacent receivers (130, 132) is 4.8 meters,
the receivers (130 to 136) are arranged on the same sections as the transmitters (1a to 4c),
one receiver (130) is in each case arranged between two transmitters (1a, 1b), preferably at the same distance (A6) from the two transmitters (1a, 1b).

13. The locating arrangement (198) as claimed in claim 11 or 12, characterized by an evaluation unit (220), which determines (506 to 510) a location with a coarse resolution depending on the reception signal at the receivers (130 to 136),
and which carries out a finer spatial resolution (512, 514) relative to the coarse resolution on the basis of a propagation time measurement that has been determined with the aid of at least two transmitters (1a, 1b), preferably in an identification unit (300), which stores an identification in an electronic memory unit, the receivers (130 to 136) preferably also serving to receive data from the objects to be located.

14. The locating arrangement (198) as claimed in one of the preceding claims, characterized by a plurality of connection units (230 to 238) at each of which a plurality of antenna modules are operated, an antenna module preferably containing a reception antenna (130) and a plurality of transmitters (1a to 1c),
and the connection units (230 to 236) preferably being connected via a local data transmission network (222).

15. The locating arrangement (198) as claimed in one of the preceding claims, characterized by at least 500 or at least 1000 identification units (300) which have

mutually different identifications and which are arranged in the acoustic irradiation range of the transmitters (1a to 4c),
the identification units (300) preferably in each case being fixed to a receptacle container for a plurality of substrates for integrated circuits.

16. An identification unit (300), having a memory unit, in which is stored an identification which distinguishes the identification unit (300) from other identically constructed identification units (300),
having an ultrasonic receiver (330),
having a radiation transmitter (340),
having a radiation receiver (340),
and having a control unit, which carries out an ultrasound propagation time measurement depending on a synchronization signal received by the radiation receiver (340) and transmits the result with the aid of the radiation transmitter (340), characterized by at least one luminous unit (332, 334) that can be driven via the radiation receiver (340).

17. The identification unit (300) as claimed in claim 17, characterized by a bistable character display unit (304), which displays the content to be represented even after the operating voltage has been switched off.

18. A location determining method, having the following steps:
constructing a locating arrangement (198) comprising a plurality of ultrasonic transmitters (1a to 4c) along at least one path (102 to 108),
constructing at least two radiation receivers (130 to 136) or radiation transmitters that in each case receive radiation from at least one region irradiated

with sound by a transmitter (1a to 4c), introducing at least one identification unit (300) into a region irradiated with sound by at least two transmitters (1a to 4c), carrying out an ultrasonic propagation time measurement from at least two transmitters (1a to 4c) to the identification unit (300) and determining at least one propagation time datum, determining a fine position of the identification unit (300) depending on the propagation time datum, determining a coarse position of the identification unit (300) with the aid of at least two radiation transmitters (130 to 136) or radiation receivers (130 to 136), combining the fine position and the coarse position to form a location datum.

19. The method as claimed in claim 18, characterized by the step of:

carrying out the propagation time measurement in the identification unit (300), communicating the propagation time datum from the identification unit (300) via a radiation receiver (130 to 136) to an evaluation unit that determines the location datum, and preferably determining the coarse position on the basis of the reception intensity upon reception of the propagation time datum at at least two radiation receivers (130 to 136).

20. The method as claimed in claim 18 or 19, characterized in that a locating arrangement as claimed in one of claims 1 to 15 and/or an identification unit (300) as claimed in claim 17 or 18 is used.

21. The method as claimed in one of claims 18 to 20, characterized by at least one of the following steps:

determining the fine position by trigonometrical calculations in a plane which contains a section in which the ultrasonic transmitters (1a to 4c) are strung and which contains the identification unit (300), determining a fine position by means of only one spatial coordinate.

22. A batch box localization system, having a locating arrangement (198), which extensively detects the transport paths for a plurality of batch boxes between a plurality of manufacturing installations and locates the batch boxes with an accuracy of less than two meters or less than one meter, characterized in that a locating arrangement as claimed in one of claims 1 to 15 and/or an identification unit (300) as claimed in claim 16 or 17 is used.

23. The batch box localization system, as claimed in claim 22, characterized by a communication system that outputs manufacturing data and/or transport data to output units (300) fixed to the batch boxes.